

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

REQUEST FOR ACCESS TO AN ABANDONED APPLICATION UNDER 37 CFR 1.14

Bring completed form to:
File Information Unit
Crystal Plaza Three, Room 1D01
2021 South Clark Place
Arlington, VA
Telephone: (703) 308-2733

RECEIVED

MAY 25 2004

File Information Unit

In re Application of

Application Number

08/385 404.

Filed

Feb 7, 1995.

Paper No.

A32

I hereby request access under 37 CFR 1.14(a)(1)(iv) to the application file record of the above-identified ABANDONED application, which is identified in, or to which a benefit is claimed, in the following document (as shown in the attachment):

United States Patent Application Publication No. _____, page, _____ line _____,

United States Patent Number 6,497,872, column _____, line, _____ or

WIPO Pub. No. _____, page _____, line _____.

Related Information about Access to Pending Applications (37 CFR 1.14):

Direct access to pending applications is not available to the public but copies may be available and may be purchased from the Office of Public Records upon payment of the appropriate fee (37 CFR 1.19(b)), as follows:

For published applications that are still pending, a member of the public may obtain a copy of:

- the file contents;
- the pending application as originally filed; or
- any document in the file of the pending application.

For unpublished applications that are still pending:

- (1) If the benefit of the pending application is claimed under 35 U.S.C. 119(a), 120, 121, or 365 in another application that has: (a) issued as a U.S. patent, or (b) published as a statutory invention registration, a U.S. patent application publication, or an international patent application publication in accordance with PCT Article 21(2), a member of the public may obtain a copy of:
 - the file contents;
 - the pending application as originally filed; or
 - any document in the file of the pending application.
- (2) If the application is incorporated by reference or otherwise identified in a U.S. patent, a statutory invention registration, a U.S. patent application publication, or an international patent application publication in accordance with PCT Article 21(2), a member of the public may obtain a copy of:
 - the pending application as originally filed.

Alia Siddiq

Signature

5-25-04.

Date

ATTIA

Typed or printed name

Registration Number, if applicable

703 521-1952

Telephone Number

FOR PTO USE ONLY

Approved by

RECEIVED
(Initials)

Unit:

MAY 25 2004

File Information Unit

This collection of information is required by 37 CFR 1.14. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. BRING TO: File Information Unit, Crystal Plaza Three, Room 1D01, 2021 South Clark Place, Arlington, VA.



US006497872B1

(12) **United States Patent**
Weiss et al.

(10) Patent No.: **US 6,497,872 B1**
(45) Date of Patent: **Dec. 24, 2002**

(54) **NEURAL TRANSPLANTATION USING
PROLIFERATED MULTIPOTENT NEURAL
STEM CELLS AND THEIR PROGENY**

(75) Inventors: **Samuel Weiss, Alberta (CA); Brent
Reynolds, Alberta (CA); Joseph P.
Hammang, Barrington, RI (US); E.
Edward Baetge, Barrington, RI (US)**

(73) Assignee: **NeuroSpheres Holdings Ltd., Calgary
(CA)**

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **08/486,313**

(22) Filed: **Jun. 7, 1995**

Related U.S. Application Data

(63) Continuation-in-part of application No. 08/270,412, filed on
Jul. 5, 1994, now abandoned, which is a continuation of
application No. 07/726,812, filed on Jul. 8, 1991, now
abandoned, application No. 08/486,313, which is a continu-
ation-in-part of application No. 08/385,404, filed on Feb. 7,
1995, now abandoned, which is a continuation of application
No. 07/961,813, filed on Oct. 16, 1992, now abandoned,
which is a continuation-in-part of application No. 07/726,
812, application No. 08/486,313, which is a continuation-
in-part of application No. 08/359,945, filed on Dec. 20,
1994, now abandoned, which is a continuation of application
No. 08/221,655, filed on Apr. 1, 1994, now abandoned,
which is a continuation of application No. 07/967,622, filed
on Oct. 28, 1992, now abandoned, which is a continuation-
in-part of application No. 07/726,812, filed on Jul. 8, 1991,
now abandoned, application No. 08/486,313, which is a
continuation-in-part of application No. 08/376,062, filed on
Jan. 20, 1995, now abandoned, which is a continuation of
application No. 08/010,829, filed on Jan. 29, 1993, now
abandoned, which is a continuation-in-part of application
No. 07/726,812, application No. 08/486,313, which is a
continuation-in-part of application No. 08/149,508, filed on
Nov. 9, 1993, now abandoned, which is a continuation-in-
part of application No. 07/726,812, application No. 08/486,
313, which is a continuation-in-part of application No. 08/311,
099, filed on Sep. 23, 1994, now abandoned, which is a
continuation-in-part of application No. 07/726,812,
application No. 08/486,313, which is a continuation-in-part
of application No. 08/338,730, filed on Nov. 14, 1994, now
abandoned, which is a continuation-in-part of application
No. 07/726,812.

(51) Int. Cl.⁷ **A01N 63/00; A01N 65/00;
A61K 48/00**

(52) U.S. Cl. **424/93.1; 424/93.2; 424/93.21**

(58) Field of Search **424/93.1, 93.2,
424/93.21; 514/44**

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,753,635 A 6/1988 Sagen et al. 604/49
4,980,174 A 12/1990 Sagen et al. 424/563
5,082,670 A * 1/1992 Gage et al. 424/520
5,175,103 A 12/1992 Lee et al. 435/172.3
5,411,883 A 5/1995 Boss et al. 435/240.2
5,612,211 A 3/1997 Wilson et al. 435/378
5,753,506 A 5/1998 Johne 435/240.23

FOREIGN PATENT DOCUMENTS

EP	0 233 838	8/1987
WO	89/03872	5/1989
WO	90/06757	6/1990
WO	91/02003	2/1991
WO	91/09936	7/1991
WO	91/17242	11/1991
WO	93/01275	1/1993
WO	93/09802	5/1993
WO	94/03199	2/1994

OTHER PUBLICATIONS

Lubetzki et al. Ann. New York Acad. Sci. 605: 66-70 (Nov.
1990).
Emmerich et al Cell Transplantation 1: 401-427 (1992).
Friedmann. T.1.6. 10(6):210-214 (1994).
Orlein et al "Report & Recommendation . . . Gene Therapy"
Dec. 7, 1995. NIH.
Cattaneo et al (1990) Nature 347, 762-765, 1990.*
Drago et al. (Proc. Natl. Acad. Sci. USA, (Mar. 15, 1991) 88
(6) 2199-203).
Isacson et al. (Exp. Brain Res. (1989) 75 (1) 213-20).
Lindvall et al. (Archives of Neurology, (Jun. 1989) 46 (6)
615-31).
Wendt et al. (Exp. Neurology, (Feb. 1983) 79 (2) 452-61).
Kesslak et al. (Exp. Neurology, (Dec. 1986) 94 (3)
615-26).
Andres F. (J. Neural Transplantation, (1989) 1 (1) 11-22).
Price et al. (Development, (Nov. 1988) 104 (3) 473-82).
Federoff et al. (Proc. Natl. Acad. Sci. USA 89 (5). 1992.
1636-1640).
Pezzali et al Movement? Disorders C(4): 211, 1991.*
Olzaz et al Thrmptionation? 1989.*

(List continued on next page.)

Primary Examiner—Anne-Marie Baker

(74) *Attorney, Agent, or Firm*—Mintz, Levin, Cohn, Ferris,
Glovsky and Popeo, P.C.; Ivor R. Elfrin, Esq.; Christine V.
Karnakis, Esq.

(57)

ABSTRACT

The invention provides methods of transplanting multipo-
tent neural stem cell progeny to a host by obtaining a
population of cells derived from mammalian neural tissue
containing at least one multipotent CNS multipotent neural
stem cell; culturing the neural stem cell in a culture medium
containing one or more growth factors which induce mul-
tipotent neural stem cell proliferation; inducing proliferation
of the multipotent neural stem cell to produce neural stem
cell progeny which includes multipotent neural stem cell
progeny cells; and transplanting the multipotent neural stem
cell progeny to the host. Also provided are methods of
transplanting neural stem cell progeny to a host by obtaining
an in vitro cell culture containing CNS neural stem cells
where one or more cells in the culture (i) proliferates in a
culture medium supplemented with one or more mitogens,
(ii) retains the capacity for renewed proliferation, and (iii)
maintains the multipotential capacity, under suitable culture
conditions, to differentiate into neurons, astrocytes, and
oligodendrocytes; and transplanting the one or more cells to
the host.

32 Claims, 3 Drawing Sheets